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Ken Dubuc

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EXAMINER

WONG, BLANCHE

ART UNIT

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 09/998,504	<b>Applicant(s)</b> DUBUC ET AL.	
	<b>Examiner</b> Blanche Wong	<b>Art Unit</b> 2419	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE \_\_\_\_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 31 March 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,4-11 and 13-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1 and 4-9 is/are allowed.
- 6) ☒ Claim(s) 10,11,13-33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____.                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____.  | 6) <input type="checkbox"/> Other: ____.                          |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments with respect to claim 10,11,13-33 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Objections***

2. Claims 1 and 24 are objected to because of the following informalities:

With regard to claim 1, Examiner suggests replacing “a second differentiated service profile operatively coupled to the second service interface” in line 12 with “a second differentiated service profile associated with the second service interface” in consistent with “a differentiated service profile associated with the service interface” in line 5.

With regard to claim 24, Examiner suggests replacing “the first differentiated service codepoint value” in lines 1-2 with “a first differentiated service codepoint value” and replacing “a first differentiated service codepoint value” in line 4 with “the first differentiated service codepoint value” for clarity.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. **Claims 19,20,26,27** are rejected under 35 U.S.C. 102(e) as being anticipated by Goudreau (U.S. Pat No. 6,940,862).

With regard to claim 19, Goudreau discloses

a service interface (**“Devices 42 act as input ports [of edge router 24]”, col. 10, line 35**) for carrying the data packets, wherein the data packets have a plurality of the classes of service (**service code that may be associated with the underlying packet, col. 10, line 33**) (*See Also* **“The edge router 24 also examines a service code in the packet ... to determine the class of service ...”, col. 9, lines 61-63**);

transport interfaces (**output ports 44 of edge router 24**) operably coupled to the service interface (**input ports 42**) (*See Also* **Fig. 6**), the transport interfaces carrying subsets of the data packets (**Packets are distributed to each output port. Therefore each output port has a subset of data packets**) wherein the classes of service of the subsets of the data packets carried by the transport interfaces are unique (**appropriated**) to each of the transport interfaces (**“Accordingly, the input ports 42 will determine an appropriated output port 44 depending upon whether the QoS ....”, col. 10, lines 39-40**).

With regard to claim 20, Goudreau further discloses the transport interfaces **(output ports 44 of edge router 24)** are operably coupled to the service interface in bundles **(input ports 42)** **(See Also Fig. 6)**, each bundle having exactly one of the transport interfaces for each of the classes of service **(an appropriated output port)** **(“Accordingly, the input ports 42 will determine an appropriated output port 44 depending upon whether the QoS ....”, col. 10, lines 39-40).**

With regard to claim 26, Goudreau discloses carrying the data packets having a plurality of the classes of service **(service code that may be associated with the underlying packet, col. 10, line 33)** **(See Also “The edge router 24 also examines a service code in the packet ... to determine the class of service ...”, col. 9, lines 61-63)** over a service interface **(“Devices 42 act as input ports [of edge router 24]”, col. 10, line 35);**

carrying the data packets over transport interfaces **(output ports 44 of edge router 24)**, the transport interfaces carrying subsets of the data packets **(Packets are distributed to each output port. Therefore each output port has a subset of data packets)** wherein the classes of service of the subsets of the data packets carried by the transport interfaces are unique **(appropriated)** to each of the transport interfaces **(“Accordingly, the input ports 42 will determine an appropriated output port 44 depending upon whether the QoS ....”, col. 10, lines 39-40).**

With regard to claim 27, Goudreau further discloses organizing the transport interfaces (**output ports 44 of edge router 24**) in bundles (**See A/so Fig. 6**), each bundle having exactly one of the transport interfaces for each of the classes of service (**an appropriated output port**) (“Accordingly, the input ports 42 will determine an appropriated output port 44 depending upon whether the QoS ....”, col. 10, lines 39-40).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claims 10-15,18,21,23-25,28,30-33** are rejected under 35 U.S.C. 103(a) as being unpatentable over Goudreau (U.S. Pat No. 6,940,862) in view of RFC 2474 (“Definition of the Differentiated Services Field (DS Field) in the IPv4 and IPv6 Headers”).

With regard to claim 10, Goudreau discloses (**Fig. 6**)  
receiving the data packets at a service interface (**“Devices 42 act as input ports [of edge router 24]”, col. 10, line 35**);  
assigning classes of service (**class of service, col. 10, line 38**) based on service codepoint values associated with the data packets (**service code that may be**

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**associated with the underlying packet, col. 10, line 33) (See A/so “The edge router 24 also examines a service code in the packet ... to determine the class of service ...”, col. 9, lines 61-63);**

routing data packets to transport interfaces **(output ports 44 of edge router 24)** associated with the classes of service **(QoS is class of service)** (“Accordingly, the **input ports 42 will determine an appropriated output port 44 depending upon whether the QoS ....**”, col. 10, lines 39-40) (See A/so “a QoS table to determine ... **class of service**”, col. 10, line 36-38); and

receiving at a second service interface **(device/input ports 42 of edge router 28)** the data packets from the transport interfaces **(output ports 44 of edge router 24)** (“Packets routed into backbone 26 by edge router 24 make one or more hops, eventually reaching another edge router 28”, col. 8, lines 49-51) (See A/so Fig. 6 illustrates a typical edge router. Therefore, edge routers 26 and 28 will have the same block diagram).

Goudreau fails to explicitly show differentiated service codepoint and profile.

In an analogous art of data transmission, RFC 2474 discloses a differentiated service codepoint **(DSCP)** and profile **(DS field)** **(DS field are used as a codepoint (DSCP), p. 6, Section 3. Differentiated Services Field Definition) (See A/so DSCP field within the DS field, p.14, Section 6 IANA Considerations).**

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine “a differentiated service codepoint and profile” as taught in

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RFC 2474, with the communication system of Goudreau, in order to provide for a framework and building blocks to enable deployment of scalable service discrimination in the Internet. RFC 2474, p.3, Section 1. Introduction.

With regard to claim 11, Goudreau further discloses routing packets according to destination addresses associated with the data packets (**destination code that may be associated with the underlying packet**", col. 10, lines 32-34).

With regard to claim 13, Goudreau further discloses queuing the data packets in queues at the second service interface (**input ports 42 of edge router 28**), each of the queues associated with one of the transport interfaces (**if edge routers 26 and 28 are put side by side, then each output port of edge router 26 can correspond to each input port of edge router 28**) ("Packets routed into backbone 26 by edge router 24 make one or more hops, eventually reaching another edge router 28", col. 8, lines 49-51) (See Also Fig. 6 illustrates a typical edge router. Therefore, edge routers 26 and 28 will have the same block diagram).

With regard to claim 14, Goudreau further discloses queuing the data packets in queues at the second service interface (**output ports 44 of edge router 28**), wherein the queues are selected according to the classes



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of service (**class of service**) of the data packets (**“Accordingly, the input ports 42 will determine an appropriated output port 44 depending upon whether the QoS ....”, col. 10, lines 39-40**) (See A/so **“a QoS table to determine ... class of service”, col. 10, line 36-38**).

With regard to claim 15, Goudreau further discloses  
communicating the classes of service as information within the data packets  
(**service code that may be associated with the underlying packet, col. 10, line 33**).

With regard to claim 18, Goudreau further discloses wherein each of the transport interfaces is associated with exactly one of the classes of service  
(**“Accordingly, the input ports 42 will determine an appropriated output port 44 depending upon whether the QoS ....”, col. 10, lines 39-40**).

With regard to claim 21, Goudreau discloses the apparatus of claim 19.  
Goudreau further discloses a service profile (**a routing table**) associated with the service interface (**input port**) (**each [input port] has a routing table 46, col. 10, line 35**), the service profile defining a correspondence (**table**) of service codepoint values to the classes of service (**QoS is class of service**) (**“Accordingly, the input ports 42 will determine an appropriated output port 44 depending upon whether the QoS ....”, col. 10, lines 39-40**) (See A/so **“a QoS table to determine ... class of service”, col. 10, line 36-38**).

Goudreau fails to explicitly show differentiated service codepoint and profile.

In an analogous art of data transmission, RFC 2474 discloses a differentiated service codepoint **(DSCP)** and profile **(DS field) (DS field are used as a codepoint (DSCP), p. 6, Section 3. Differentiated Services Field Definition) (See A/so DSCP field within the DS field, p.14, Section 6 IANA Considerations).**

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine “differentiated service codepoint and profile” as taught in RFC 2474, with the communication system of Goudreau, in order to provide for a framework and building blocks to enable deployment of scalable service discrimination in the Internet. RFC 2474, p.3, Section 1. Introduction.

With regard to claim 23, Goudreau further discloses wherein the transport interfaces **(output ports 44)** are operably coupled to the service interface **(input ports 42)** in bundles **(See A/so Fig. 6)**, each bundle having exactly one of the transport interfaces for each of the classes of service **(an appropriated output port)** **(“Accordingly, the input ports 42 will determine an appropriated output port 44 depending upon whether the QoS ....”, col. 10, lines 39-40)(See A/so “a QoS table to determine ... class of service”, col. 10, line 36-38)**, and wherein the service interface **(input port 42)** applies a routing function **(processed) (“processed by [input] ports 42]”, col. 10, line 41)** to select a first bundle of the bundles over which a first data packet of the data packets is to be carried **(“Accordingly, the input ports 42**

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**will determine an appropriated output port 44 depending upon whether the QoS ....”, col. 10, lines 39-40).**

With regard to claim 24, Goudreau further discloses the first data packet has a first service codepoint value **(service code that may be associated with the underlying packet, col. 10, line 33)**, and wherein the service interface uses a service profile to determine a first class of service of the first data packet based on the first service codepoint value of the first data packet **(“Accordingly, the input ports 42 will determine an appropriated output port 44 depending upon whether the QoS ....”, col. 10, lines 39-40).**

With regard to claim 25, Goudreau further discloses the service interface uses the first bundle and the first class of service to select a first transport interface of the first bundle to carry the first data packet **(“Accordingly, the input ports 42 will determine an appropriated output port 44 depending upon whether the QoS ....”, col. 10, lines 39-40).**

With regard to claim 28, Goudreau discloses the method of claim 26. Goudreau further discloses mapping **(a routing table)** service codepoint values to the classes of service **(each [input port] has a routing table 46, col. 10, line 35).**

Goudreau fails to explicitly show differentiated service codepoint values.

In an analogous art of data transmission, RFC 2474 discloses a differentiated service codepoint values **(DSCP) (DS field are used as a codepoint (DSCP), p. 6, Section 3. Differentiated Services Field Definition) (See A/so DSCP field within the DS field, p.14, Section 6 IANA Considerations).**

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine “differentiated service codepoint values” as taught in RFC 2474, with the communication system of Goudreau, in order to provide for a framework and building blocks to enable deployment of scalable service discrimination in the Internet. RFC 2474, p.3, Section 1. Introduction.

With regard to claim 30, Goudreaux further discloses one service profile **(a routing table)** is associated with each service interface **(input port) (each [input port] has a routing table 46, col. 10, line 35).**

With regard to claim 31, Goudreau further discloses organizing the transport interfaces **(output ports 44)** in bundles **(See A/so Fig. 6)**, each bundle having exactly one of the transport interfaces for each of the classes of service **(an appropriated output port) (“Accordingly, the input ports 42 will determine an appropriated output port 44 depending upon whether the QoS ....”, col. 10, lines 39-40)(See A/so “a QoS table to determine ... class of service”, col. 10, line 36-38),**

applying a routing function (**processed**) ("**processed by [input] ports 42**", col. **10, line 41**) to select a first bundle of the bundles over which a first data packet of the data packets is to be carried ("**Accordingly, the input ports 42 will determine an appropriated output port 44 depending upon whether the QoS ....**", col. 10, lines **39-40**).

With regard to claim 32, Goudreau further discloses  
determining a first class of service of the first data packet based on the first service codepoint value (**service code that may be associated with the underlying packet, col. 10, line 33**) of the first data packet ("**Accordingly, the input ports 42 will determine an appropriated output port 44 depending upon whether the QoS ....**", col. 10, lines **39-40**).

With regard to claim 33, Goudreau further discloses  
selecting a first transport interface of the first bundle to carry the first data packet based on the first bundle and the first class of service ("**Accordingly, the input ports 42 will determine an appropriated output port 44 depending upon whether the QoS ....**", col. 10, lines **39-40**).

7. **Claims 16,17,22,29** are rejected under 35 U.S.C. 103(a) as being unpatentable over Goudreau as applied to claims 10 and 14 above, and further in view of RFC 2475 ("Architecture for Differentiated Services").

With regard to claim 16, the combination of Goudreau and RFC 2474 discloses the method of claim 14.

Goudreau and RFC 2474 fails to explicitly show  
determining new differentiated service codepoint values based on the classes of service upon receipt of the data packets at the second service interface; and  
applying the new differentiated service codepoint values to the data packets.

In an analogous art of differentiated services, RFC 2475 discloses  
determining new differentiated service codepoint values based on the classes of service upon receipt of the data packets at the second service interface **(packet re-marking and simple codepoint re-marking, p.14, Section 2.3 Traffic Classification and Conditioning) (See Also “a SLA between an upstream network and a downstream network DS domain”, p.14, Section 2.3 Traffic Classification and Conditioning); and**  
applying the new differentiated service codepoint values to the data packets **(packet re-marking).**

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine " determining new differentiated service codepoint values based on the classes of service upon receipt of the data packets at the second service interface; and applying the new differentiated service codepoint values to the data

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packets” as taught in RFC 2475, with the system of Goudreau and RFC 2474, for the benefit of using of known technique to improve similar devices (methods, or products) in the same way. *KSR*.

With regard to claim 17, the combination of Goudreau and RFC 2474 discloses the method of claim 10.

Goudreau and RFC 2474 fails to explicitly show preserving the differentiated service codepoint values associated with the data packets between the first service interface and the second service interface, inclusive.

In an analogous art of differentiated services, RFC 2475 discloses preserving the differentiated service codepoint values associated with the data packets between the first service interface and the second service interface, inclusive **(packet re-marking depends on the SLA. It may not be necessary, then there is no codepoint re-marking and thus "preserving" the previous codepoint) (See Also “The extent of traffic conditioning required is dependent on the specifics of the service offering ....” and “The details of traffic conditioning policies which are negotiated between network ....”, p.14, Section 2.3 Traffic Classification and Conditioning).**

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine "preserving the differentiated service codepoint values associated with the data packets between the first service interface and the second

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service interface, inclusive” as taught in RFC 2475, with the system of Goudreau and RFC 2474, for the benefit of using of known technique to improve similar devices (methods, or products) in the same way. *KSR*.

With regard to claim 22, the combination of Goudreau and RFC 2474 discloses the apparatus of claim 21. In claim 21, Goudreau further discloses wherein the service profile defining a correspondence of service codepoint values to the classes of service.

Goudreau and RFC 2474 fails to explicitly show to drop precedence.

In an analogous art of differentiated services, RFC 2475 discloses to drop precedence **(re-marking is when the previous is replaced, that is, “drop precedence”)** (packet re-marking and simple codepoint re-marking, p.14, Section 2.3 Traffic Classification and Conditioning).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine " to drop precedence” as taught in RFC 2475, with the system of Goudreau and RFC 2474, for the benefit of using of known technique to improve similar devices (methods, or products) in the same way. *KSR*.

With regard to claim 29, the combination Goudreau and RFC 2474 discloses the method of claim 28. In claim 28, the combination of Goudreau and RFC 2474 discloses mapping differentiated service codepoint values to the classes of service.

Goudreau and RFC 2474 fails to explicitly show to drop precedence.



In an analogous art of differentiated services, RFC 2475 discloses to drop precedence (**re-marking is when the previous is replaced, that is, “drop precedence”**) (**packet re-marking and simple codepoint re-marking, p.14, Section 2.3 Traffic Classification and Conditioning**).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine "to drop precedence" as taught in RFC 2475, with the system of Goudreau and RFC 2474, for the benefit of using of known technique to improve similar devices (methods, or products) in the same way. *KSR*.

***Allowable Subject Matter***

8. **Claims 1,4-9** are allowed.
9. The following is a statement of reasons for the indication of allowable subject matter:

With regard to claim 1, the prior art of record fails to anticipate or make obvious “a service interface for receiving the data packets, ... a differentiated service profile associated with the service interface; a plurality of transport interfaces operatively coupled to the service interface, the service interface assigning a first data packet having a first differentiated service codepoint value to a first transport interface according to the differentiated service profile, wherein the service interface assigns a second data packet having a second differentiate service codepoint value to a second transport interface according to the differentiated service profile; a second service

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interface; and a second differentiated service profile [associated with] the second service interface, the second service interface operatively coupled to the plurality of transport interfaces, the second service interface assigning a third data packet having a third differentiated service codepoint value to a third transport interface according to the second differentiated service profile.”

### ***Conclusion***

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Blanche Wong whose telephone number is 571-272-3177. The examiner can normally be reached on Monday through Friday, 830am to 530pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz Sheikh can be reached on 571-272-3795. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Blanche Wong/  
Examiner, Art Unit 2419  
July 21, 2009